Reg. No. : | | | | | | | | | | |

Question Paper Code: 53092

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Third Semester

Chemical Engineering

15UCH302 - ORGANIC CHEMISTRY

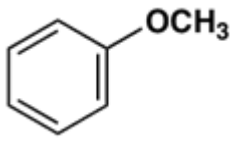
(Regulation 2015)

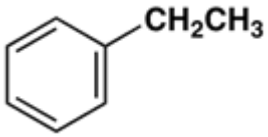
Duration: Three hours | Maximum: 100 Marks

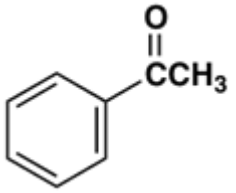
Answer ALL Questions

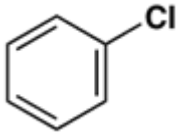
PART A - (10 x 1 = 10 Marks)

1. Which gives a *meta* nitro compound as the main product upon nitration with a nitric acid-sulfuric acid mixture

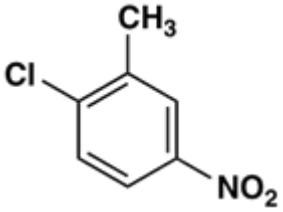
(a) 

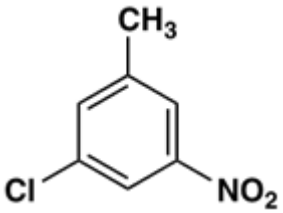
(b) 

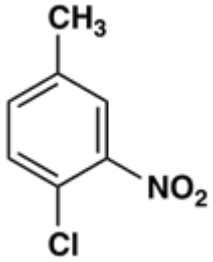
(c) 

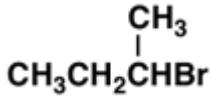
(d) 

2. Which will be the main product upon chlorination of *m*-nitrotoluene with $Cl_2/AlCl_3$

(a) 

(b) 

(c) 

(d) 

3. Which of the following reacts by the E1 mechanism in ethanol most readily

(a) $CH_3CH_2CH_2CH_2Br$ (b) $(CH_3)_2CHCH_2Br$

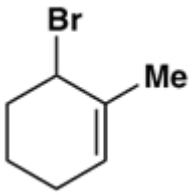
(c) $(CH_3)_3CBr$ (d) $CH_3CH_2\underset{\displaystyle Br}{\underset{|}{C}}HCH_3$

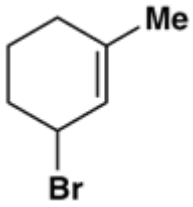
4. Which is the least reactive compound by the S_N1 mechanism?

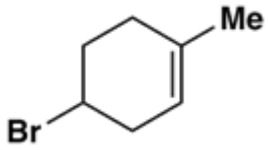
(a) $CH_2{=}CHCH_2Br$ (b) $CH_2{=}CH\underset{\displaystyle CH_3}{\underset{|}{C}}HBr$

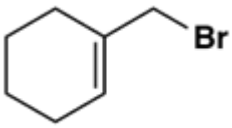
(c) $CH_3CH_2CH_2Br$ (d) $CH_3CH_2\underset{\displaystyle CH_3}{\underset{|}{C}}HBr$

5. Which of (a)-(d) is the most unlikely product of bromination of 1-methylcyclohexene with NBS and initiation by photolysis of a peroxide?

(a) 

(b) 

(c) 

(d) 

6. Melting point of phenol is

(a) 55°C (b) 43°C (c) 25°C (d) 15°C

7. The dye which is colourless in reduced form but becomes coloured by oxidising agent is

(a) mordant dye (b) vat dye (c) acid dye (d) none

8. With which cation, alizarin will impart red colour to the fabrics?

(a) Al^{3+} (b) Ba^{2+} (c) Fe^{3+} (d) Cr^{3+}

9. The first amino acid in a polypeptide chain is

(a) Serine (b) Valine (c) Alanine (d) Methionine

10. Sulphur containing amino acids are

(a) Cysteine & methionine (b) Methionine & threonine
(c) Cysteine & threonine (d) Cysteine & Serine

PART - B (5 x 2 = 10 Marks)

11. Write Fischer esterification?

12. Distinguish between S_N2 and E2 reactions.

13. Why light or heat required for radical reactions?

14. Write any one synthesis method for unsaturated acids.

15. Write Biuret test principle and procedure.

PART - C (5 x 16 = 80 Marks)

16. (a) Explain nitration and halogenation reactions with suitable mechanisms. (16)

Or

(b) Explain oxidation and reduction reactions with suitable mechanisms. (16)

17. (a) Explain any one nucleophilic and electrophiliic substitution reactions with suitable mechanism. (16)

Or

(b) Write the mechanism of (i) Friedel craft reaction (ii) Reimer Tiemann reaction (iii) Aldol condensation and (iv) Benzoin condensation. (16)

18. (a) Explain allylic bromination in the presence and absence of NBS. (16)

Or

(b) Explain in detail about the estimation of phenol and glucose. (16)

19. (a) Explain synthesis and uses of triphenyl methane dyes and azo dyes. (16)

Or

(b) Write any one synthesis of oxalic, malonic, succinic and adipic acid. (16)

20. (a) Explain in detail about classification of amino acids and proteins. (16)

Or

(b) Explain in detail about peptide linkage and end group analysis. (16)
